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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/399,611	09/20/1999	GARY M. MOORE	MTEC1010	2462

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EXAMINER

BUEKER, RICHARD R

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 10/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/399,611

Applicant(s)

MOORE, GARY M.

Examiner

Richard Bueker

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11, 22, 25-28 and 35-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 22 and 25-28 is/are allowed.
- 6) ☒ Claim(s) 1-11, 35 and 36 is/are rejected.
- 7) ☒ Claim(s) 37 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>14</u> . | 6) <input type="checkbox"/> Other: |

The restriction requirement has been removed in view of applicant's arguments.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7, 9-11 and 35 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Posa (4,747,367). Posa discloses a flow control system for a semiconductor processing unit comprising plural MFCs 54a and 54b at a first location, and a semiconductor processing unit at a second location. A gas manifold 100 (Fig. 2) is attached to the semiconductor processing unit and it includes within it plural manifolds including a gas supply manifold 116 for to supply gas to process chamber 16, and gas vent manifolds 115 and 122 to supply gas to vent chamber 18. Gas flow paths from the MFCs are connected to the manifold body 100 via ports 106 and 108. Three-way valve members 112 and 120 are located between the inlet ports 106, 108 (and thus the MFCs 54a and 54b) and the manifolds 115, 116 and 122. Posa (col. 5, lines 1-5) also teaches the use plural precursor gas sources and associated valves in addition to the gas sources illustrated in Fig. 2. Regarding the gas manifold exhaust valves recited in claims 2, 4 and 5, it is noted that

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Posa's three-way switching valves function both as gas manifold inlet valves for inlet manifold 116 and as gas manifold exhaust valves for vent manifolds 115 and 122. Posa does not discuss the use of a support structure to support the semiconductor processing unit and its attached manifold body, but such would be inherent or at least obvious.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Posa taken in view of Laxman (5,492,736), who describes (col. 5, lines 54-67 and col. 7, lines 44-46) the conventional use of gas cabinets to house toxic chemical sources away from a clean room. It would have been obvious to one skilled in the art to utilize a conventional gas cabinet as described by Laxman to house the gas sources illustrated in Fig. 1 of Posa.

Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's description of the prior art mixer shown in Fig. 4 of the specification (see also page 6, lines 12-27), taken in view of Moore (5,601,10) and Doyle (4,658,855). Fig. 4 does not illustrate the hydrogen gas source that supplies the hydrogen or a gas regulator located on the hydrogen gas supply line. Moore (see Figs. 2-8), however, discloses a prior art cylinder source of hydrogen for supplying hydrogen to a semiconductor fabrication process, and he shows that a regulator (215 of Fig. 2) is conventionally required to control the dispensing of the high-pressure hydrogen from the cylinder. Doyle (col. 1, lines 5-18) also discloses a hydrogen gas source for supplying a semiconductor fabrication process, and he describes the well-known need to very precisely meter the hydrogen. Doyle teaches the use of a mass flow controller as a

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regulator for precisely metering hydrogen. It would have been obvious to one skilled in the art to provide the hydrogen supply line of the prior art mixer of Fig. 4 with a regulator, in view of the teachings of Moore and Doyle that regulators were known in the art to provide the very precise hydrogen gas metering needed for semiconductor processing.


Claim 37 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 22 and 25-28 are considered allowable over the prior art of record which does not disclose or suggest a mixer and check valve arrangement for supplying semiconductor source gases as disclosed and claimed by applicant.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Bueker whose telephone number is (703) 308-1895. The examiner can normally be reached on 9 AM - 5:30 PM, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on (703) 308-1633. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.


Richard Bueker
Primary Examiner
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